



CALTRANS REGIONAL OPERATIONS FORUMS

Traveler Information Systems for
Operations





Traveler Information for Operations

- ▶ The Role of Traveler Information for transportation agencies
- ▶ How Traveler Information has Evolved
- ▶ Core Components and Relationship to other Operations areas
- ▶ Key Trends Influencing Traveler Information
- ▶ Unique customers





What Role Does Traveler Information Serve?

- ▶ A direct link to transportation users
 - ↳ Your customers
- ▶ An integrated and cross-cutting function
 - ↳ Recurring congestion information
 - ↳ Traffic incident management
 - ↳ Emergencies and alerts
 - ↳ Planned events and work zones
- ▶ Extension of agency branding
- ▶ Strong potential for innovation – delivery and partnerships



Evolution of Traveler Information



Evolution of Traveler Information



Caltrans District10 @CaltransDist10

When you see flashing lights Slow Down or Move Over. It's the Law!

Stockton, CA
dot.ca.gov/dist10
Joined April 2009

815 Photos and videos

ROAD CLOSED NO ENTRY CAUTION HEAVY TRAFFIC
ROAD AHEAD CLOSED ROAD CLOSED NO ENTRY TRAFFIC HAZARD AHEAD

Caltrans District10 Retweeted @CaltransDist10 · Jan 12

#castorm Still lots of rain and snow falling out there, so please prepare: Remember to 'Turn Around, Don't Drow' & pack an emergency kit

Do You Remember How Deep it is?

When flooded, turn around, don't drown. 18-24 inches of water can carry away an adult.

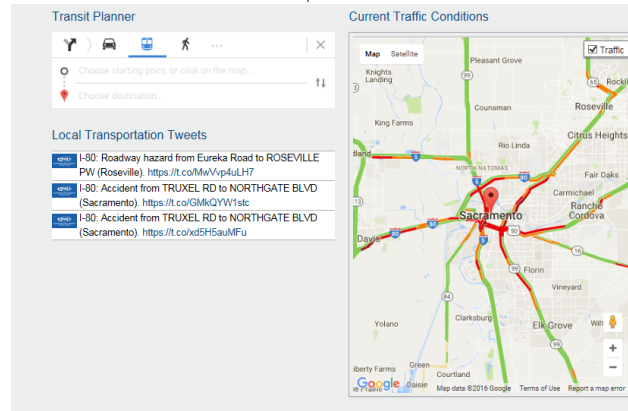
BE STORM READY WITH AN EMERGENCY PREPAREDNESS KIT

WATER, PET FOOD, FIRST AID KIT, DOCUMENTS & MONEY, SANITATION ITEMS, RADIO, FOOD, MEDICATIONS

NWS Sacramento, NWS Eureka, Cal OES and 2 others



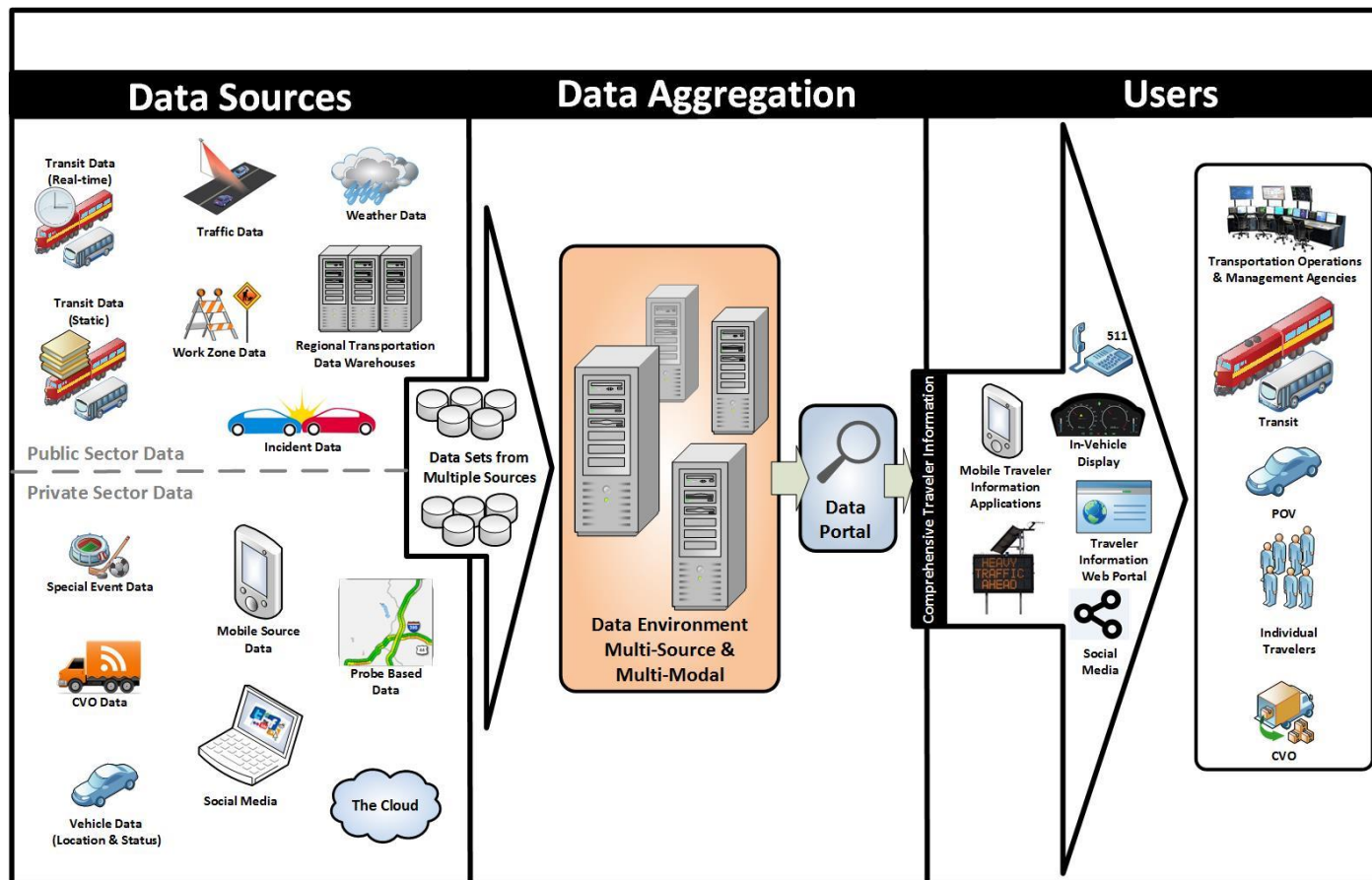
Evolution of Traveler Information



Today's Mobile Environment



Core Components





As users and system operators

- ▶ What are some of the strengths of the strengths of the Stockton/Altamont Corridor area traveler information capabilities?





As users and system operators

- ▶ What are some of the key gaps?





Key Trends Influencing Traveler Information

- ▶ The Business of Data
- ▶ Social Media
- ▶ Business Models and New Roles
- ▶ Industry, Market and Social influences





What comes to mind when you think of ***BIG Data??***





The Business of Data

- ▶ Who is responsible for generating data to support operations?
- ▶ Who is responsible for managing the security of the data?
- ▶ What do we mean by “crowdsourced” data – and how do these companies get it?





The Business of Traveler Information...and Data

- ▶ Data is more available, more ubiquitous
 - ↳ Not limited to agency infrastructure
 - ↳ Some agencies very experienced with integrating private sector data into traveler info and ops
- ▶ More “competition” in the industry
 - ↳ Mobile applications (private and media)
 - ↳ Deep supply chain for traveler information
- ▶ What are objectives of private traveler information providers? Are they the same as agencies?



Operations Program Challenges for Big Data

- ▶ Legacy technology environments
 - ↳ Expansion and consolidation challenges
 - ↳ Siloed environments
- ▶ Just now talking about “the cloud”...
- ▶ Managing unstructured data in a structured environment
- ▶ Resources to manage and innovate
- ▶ Changes to “business as usual”
- ▶ Data security and liability
- ▶ Others?

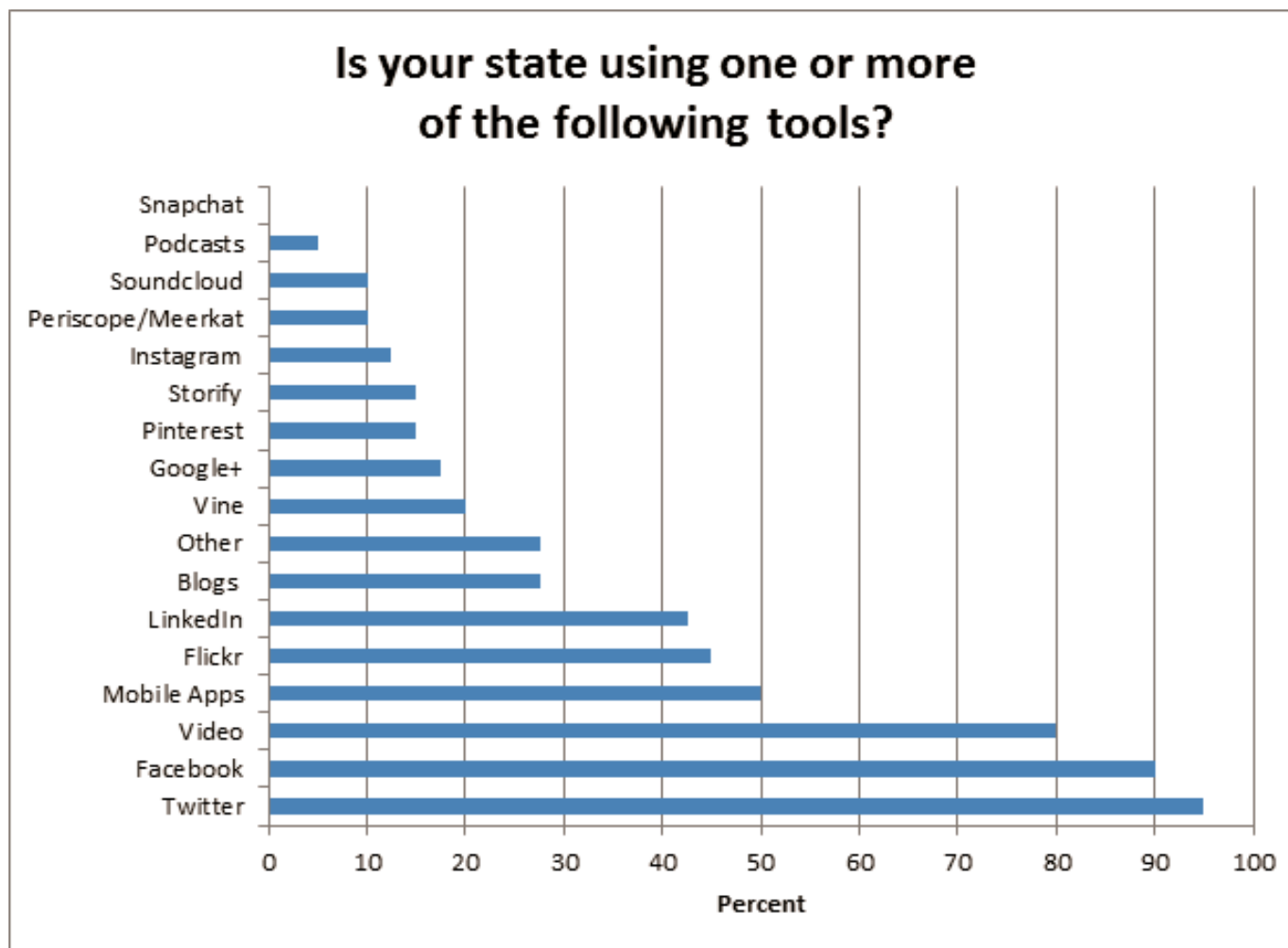




Key Trend: Social Media

- ▶ Impact of social media on traveler information
- ▶ Emphasis on the end user has raised the profile for social media tools within state DOTs
- ▶ AASHTO Annual Survey
- ▶ Trends, new tools, 'fading' tools

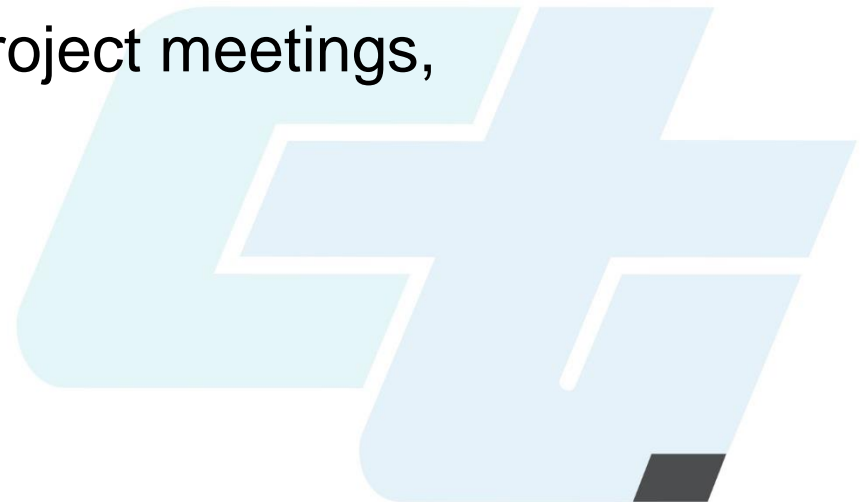






Social Media for Traveler Information

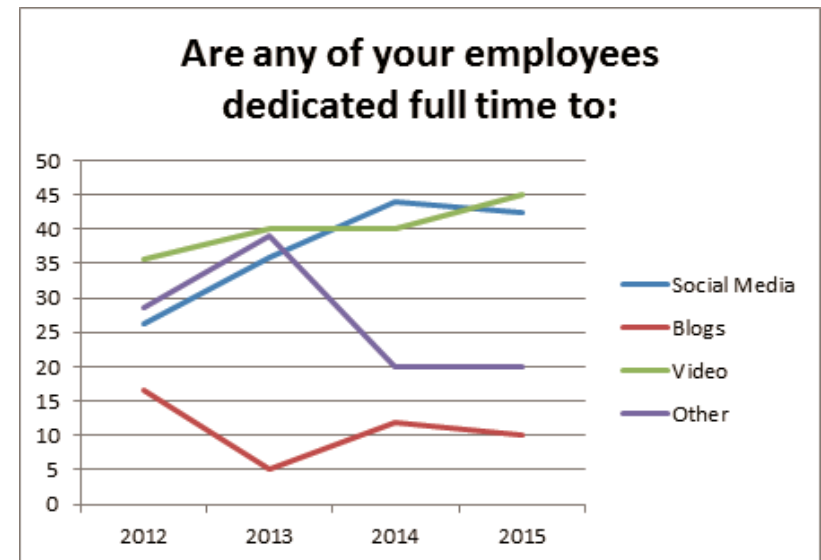
- ▶ Alerts – closures, incidents, lanes blocked
- ▶ Hazards, including weather and disasters
- ▶ Road conditions
- ▶ Special event traffic advisories
- ▶ AMBER Alerts
- ▶ Project information
- ▶ Announcements – public and project meetings, milestones, achievements
- ▶ Safety messages and alerts
- ▶ Public service announcements





New Roles for Agency Social Media Staff

- ▶ Need for social media expertise in agencies
- ▶ Balancing traditional communications roles with demand for new social media tools
- ▶ Size of communications teams not growing in scale with need
- ▶ 42% of DOTs have full time staff for social media





Key Trend – Changing Roles for Public and Private Partners

Traditional Roles

- ▶ Well-defined and distinct roles and strengths
- ▶ Focus on urban area markets and commuters
- ▶ Contracted roles for private sector in ATIS
- ▶ Geographic limitations of agency infrastructure

Today's Roles

- ▶ Overlap for several functions
- ▶ Capability for corridor and multi-state information
- ▶ Self-sustaining private sector models
- ▶ New technologies can broaden coverage



What kinds of partnerships are in place?

What partnerships do you think this region needs?





Key Trend – Industry Market Influences

- ▶ Dynamic market requires nimble customer service approach
- ▶ Rapid technology turnover and short shelf-life of mobile devices
 - ↳ 10-15 years for typical DMS vs.
 - ↳ 1-2 years for mobile operating system
- ▶ Future connected vehicle capabilities
 - ↳ A lot still to be defined
 - ↳ Dependency on auto industry, technology suppliers
 - ↳ Aligning policy, need and resources
 - ↳ Opens up a wealth of potential ATIS data



Group Activity

- ▶ Small group/table activity to address 3 questions:
- ▶ Where will future trends and influences have the most impact on agency traveler information programs?
- ▶ What steps would agencies need to take?
- ▶ What is the role of agencies in the future traveler information scenario?



Customer Needs for Information

- ▶ Customer needs and expectations for traveler information
 - ↳ Changing at the pace of mobile technology
 - ↳ Defining different customers and their needs
 - ↳ Direct personal impact and connection





Freight Information Needs





Measuring Customer Satisfaction

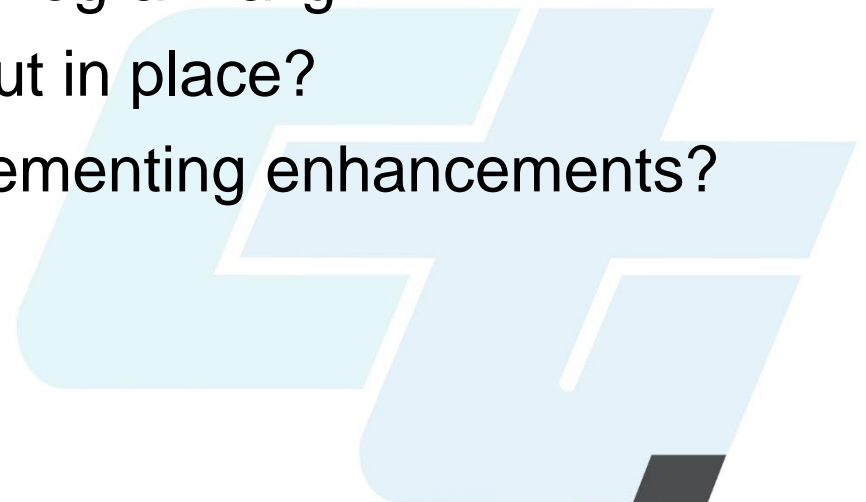
- ▶ **Is usage the only metric of customer satisfaction with your traveler information system?**
- ▶ **Let's look at another industry: Airlines**
 - ↳ People fly every day. Flights are full. Does this mean customers are “satisfied”? There are other expectations:
 - ↳ Arrivals within 10 minutes of schedule
 - ↳ No cancelled flights
 - ↳ No lost baggage
 - ↳ Edible food
 - ↳ Comfortable seats





Homework to Take Back

- ▶ Think about what metrics YOU as a user place on traveler information
 - ↳ Accessibility and availability
 - ↳ Accuracy
 - ↳ Relevance
 - ↳ Easy to understand
- ▶ Does your traveler information program align?
- ▶ If not, what changes could be put in place?
- ▶ What are some impacts to implementing enhancements?





Additional Resources

- ▶ SHRP2 L11: *Evaluating Alternative Operations Strategies to Improve Travel Time Reliability* (Traveler Information System Performance Metrics)
- ▶ SHRP2 L14: Lexicon for Conveying Travel Time Reliability Information
- ▶ Real-Time System Management Information Program (1201)
- ▶ AASHTO Annual Survey on State DOT Social Media Usage
- ▶ *Communicating With the Public Using ATIS During Disasters: A Guide for Practitioners* (FHWA-HOP-07-068)
- ▶ Real-Time Traveler Information Market Assessment (FHWA-JPO-10-055)
- ▶ NCHRP Synthesis 399: Real-Time Traveler Information Systems
- ▶ Next Generation traveler Information-A five Years Outlook
- ▶ Impact of Technology on TMC Operation (FHWA-HOP-13-008)
- ▶ Estimated Benefit of Crowdsourced Data from Social Media (FHWA-JPO-14-165)